CURRENT LITERATURE.

Microscopical methods.

American botanists are much indebted to Dr. James E. Humphrey for translating and to Messrs. Henry Holt & Co. for publishing a very valuable work on botanical microtechnique. The work was written by Dr. A. Zimmermann,[1] privat-docent in the University of Tübingen, and published in Germany last year.

It is rare that such a wealth of detailed information is condensed into so small space. The general methods of observing, staining and mounting specimens are first taken up, followed by microchemical methods, methods for investigating the cell wall and the various cell contents, some account of the preparation and examination of bacteria, and a list of literature and an index. The variety of substances which may now be detected microchemically is astonishing. Over one hundred compounds or groups of compounds are treated in the third of the volume given to microchemical methods. An equally great number of substances are dealt with in the next third of the volume, relating to the cell wall and cell contents.

In using the work some disappointment will be felt now and then on account of the brevity with which many of the topics are treated, but this fault, arising from the multiplicity of topics, is partly atoned for by the careful citation of literature, the page as well as the volume being named.

Nearly two hundred authors are mentioned in the enumeration of literature, and two or three times as many distinct works. The text has not, however, been merely compiled from these abundant data, but the author has tested a large part of the methods, and given his views of their value, often suggesting excellent modifications.

The work of the translator has been well done. He has taken occasion to add a few items to the text, the most important being in regard to celloidin imbedding. He has also added to the appendix a series of very useful reference tables, notably a table of specific gravities and percentage composition of a few common solutions and De Vries' table of "isotonic coefficients" comparing the water-absorbing power of six great groups of compounds. The author has also

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[1] ZIMMERMANN, A.—Botanical microtechnique: a handbook of methods for the preparation, staining, and microscopical investigation of vegetable structures. Trans. from the German by JAMES ELLIS HUMPHREY. 8 vo. pp. 296. figs. 63. New York: Henry Holt & Co. 1893. $2.50.

assisted the translator in supplying paragraphs upon recent investigations, thus bringing the work fully up to the time of publication of the American edition.

The typography and binding are satisfactory. Altogether the book is admirable, and no microscopical laboratory can afford to be without it.

Minor Notices.

THE MYRTLES of Brazil have just been enumerated by Hjalmar Kiærskou[1], being a part of the work on the flora of Central Brazil edited by Eug. Warming. This characteristic Brazilian family is represented as containing 418 species, 120 of which are described as new. Of the 13 genera, *Myrcia* and *Eugenia* contain over 300 of the species. *Myrcia* is represented by 154 species, 37 of which are new, and *Eugenia* by 151 species, 52 of which are new. Only the new species are characterized. Of the 24 plates, 12 are from drawings, chiefly showing leaf form and venation, and 12 are very good reproductions of photographs of herbarium sheets.

DR. JOHN W. HARSHBERGER has published an exhaustive account of maize.[2] He has brought together matters of great interest, and this contribution will make a valuable reference paper. The scope of treatment can best be indicated by some of the titles. The chapters bear the titles: Botanical, Origin, Geographical Distribution, Chemical, Agriculture–Physiological, Utility, Economic considerations, Future. Under "Botanical", the gross anatomy, histology, and bibliography, are treated. Under "Origin", which is a very interesting chapter, meteorological, botanical, archæological, ethnological, philological, and historical proofs are considered, all of which are taken to prove a central Mexican origin. "Maize originated, in all probability, in a circumscribed locality, above 4,500 feet elevation, north of the Isthmus of Tehuantepec and south of the 22nd degree of north latitude, near the ancient seat of the Maya tribes. There is hardly a doubt but that the Mayas first cultivated maize and distributed it in every direction."

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[1] KIÆRSKOU, HJALMAR.—Enumeratio Myrtacearum Brasiliensium, etc. 8vo. pp. 200, 24 plates. Hauniæ, ex officina Hoffensbergiana, 1893.

[2] HARSHBERGER, JOHN W.—Maize: a botanical and economic study. Contrib. Bot. Lab. Univ. Penn. **1:** *2*. 75–202. *pl. 4*. 1893.